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L7: Entry 1 of 3 File: USPT Jul 6, 1999

DOCUMENT-IDENTIFIER: US 5919991 A
TITLE: Solid phase extraction of phenethyl alcohol

BSPR:
The production of aroma compounds represents an important tool in the production of natural flavors for food and beverage industries. E. Albertazzi, et al., Biotech. Lett. 16, 491-6 (1994). One of the most commonly used aroma compounds is phenethyl alcohol. Phenethyl alcohol (e.g., phenethanol, 2-phenylethanol, or benzeneethanol) is naturally present in many essential oils, and has a rose-like/honey floral odor. Phenethyl alcohol is chemically synthesized or extracted in commercial applications as a flavoring or fragrance for consumer goods, such as perfumes and food.

Derivation: (a) Found in ginger oil; Ceylon and Seychelles cinnamon oil. (b) Found in eucalyptus oil.
Hazard: Moderately toxic by ingestion and skin absorption, strong irritant.
Uses: Flavoring; perfumery.

beta-**phellandrene** (4-isopropyl-1-methylene-2-cyclohexene) $CH_2{:}CCH{:}CHCH[CH(CH_3)_2]CH_2CH_2$. A monocyclic terpene occurring as (a) *d*- and (b) *l*-optical isomers.
Properties: (a) Mobile oil with pleasant odor and a burning taste. Sp. gr. 0.8520 (20°C); b.p. 171-172°C (760 mm); refractive index 1.4788. (b) Mobile oil; sp. gr. 0.8497 (15°C); b.p. 178-179°; flash point 120°F (T.C.C.). Toxicity unknown; refractive index 1.4800. Both are insoluble in water and alcohol; soluble in ether.
Derivation: (a) lemon oil. (b) Japanese peppermint oil.
Hazard: Flammable, moderate fire risk.

"Phemerol."[330] Trademark for benzethonium chloride (q.v.).

phenacaine hydrochloride $C_2H_5OC_6H_4NCH(CH_3)NC_6H_4OC_2H_5 \cdot HCl \cdot H_2O$. N,N'-Bis(para-ethoxyphenyl) acetamidine hydrochloride.
Properties: Small, white crystals; odorless; faintly bitter taste. Incompatible with alkalies. M.p. 190°C. Soluble in alcohol, boiling water and chloroform; less so in cold water, insoluble in ether.
Grades: N.F.; technical.
Use: Medicine

phenacemide (phenylacetylurea) $C_6H_5CH_2CONHCONH_2$.
Properties: White to creamy white, odorless, tasteless crystalline solid; m.p. 212-216°C; slightly soluble in alcohol, benzene, chloroform and ether; very slightly soluble in water.
Use: Medicine.

phenacetin. U.S.P. name for acetophenetidin (q.v.).

phenacyl chloride. See chloroacetophenone.

phenacyl fluoride. See fluoroacetophenone.

"Phenamine."[307] Trademark for a series of direct dyestuffs, used for the dyeing of cotton and paper.

phenanthraquinone. See phenanthrenequinone.

phenanthrene $C_{14}H_{10}$. A tricyclic hydrocarbon.
Properties Colorless, shining crystals. Soluble in alcohol, ether, benzene, carbon disulfide and acetic acid; insoluble in water. Sp. gr. 1.063; m.p. 100.35°C, b.p 340°C. Combustible.
Derivation: Fractional distillation of high-boiling coal-tar oils, with subsequent recrystallization from alcohol.
Hazard: Photosensitizes skin, and may be a carcinogen.
Uses: Dyestuffs; explosives; synthesis of drugs; biochemical research; phenanthrenequinone.

phenanthrene acetamide. $C_{16}H_{13}NO$. A carcinogen.

phenanthrenequinone. (Erroneously: phenanthraquinone) $C_{14}H_8O_2$.
Properties: Yellow-orange, needle-like crystals. Soluble in sulfuric acid, benzene; glacial acetic acid and hot alcohol; slightly soluble in ether; insoluble in water. Sp. gr. 1.4045; m.p. 206-207°C; b.p. sublimes above 360°C.
Derivation: By oxidation of a boiling solution of phenanthrene in glacial acetic acid with chromic acid, solution in sodium disulfite, precipitation by means of hydrochloric acid and recrystallization.
Uses: Organic synthesis; dyes.

1,10-phenanthroline (4,5-phenanthroline; ortho-phenanthroline) $C_{12}H_8N_2 \cdot H_2O$. A heterotricyclic compound.
Properties: White crystalline powder; m.p. 93-94°C, anhydrous 117°C. Slightly soluble in water; soluble in alcohol, benzene.
Derivation: Made by heating ortho-phenylenediamine with glycerin, nitrobenzene and concentrated sulfuric acid; or in like manner from 8-aminoquinoline.
Uses: Forms a complex compound with ferrous ions used as an indicator; drier in coatings industry.

phenarsazine chloride. See diphenylaminechloroarsine.

phenazine (azophenylene) $C_6H_4N_2C_6H_4$. A tricyclic compound.
Properties: Yellow crystals; m.p. 170-171°C; b.p. >360°C; very slightly soluble in water; soluble in alcohol and ether. Combustible.
Hazard: Probably toxic.
Uses: Organic synthesis; manufacture of dyes; larvicide.

phenethicillin. See potassium alpha-phenoxyethyl penicillin.

phenethyl acetate. See 2-phenylethyl acetate.

phenethyl alcohol (phenylethyl alcohol; 2 phenylethanol; benzyl carbinol) $C_6H_5CH_2CH_2OH$.
Properties: Colorless liquid; floral odor; sharp burning taste; sp. gr. 1.017-1.020 (25°C); refractive index (n 20/D) 1.5310-1.5340; m.p. −27°C; b.p. 219°C. Flash point 216°F. Soluble in 50% alcohol; soluble 1 part in 50 parts of water; soluble in fixed oils, alcohol, and glycerol; slightly soluble in mineral oil. Combustible.
Derivation: (a) By reduction of phenylacetic ethyl ester by sodium in absolute alcohol. (b) By the action of ethylene oxide on phenylmagnesium bromide and subsequent hydrolysis.
Grades: Technical; N.F.; F.C.C.
Containers: Tin cans and glass bottles; drums.
Uses: Organic synthesis; synthetic rose oil; soaps; flavors; antibacterial; preservative; medicine.
Hazard: May be highly toxic by inhalation or ingestion.

sec-**phenethyl alcohol.** See alpha-methylbenzyl alcoho.

phenethylamine. See 2-phenylethylamine.

phenethyl anthranilate. See 2-phenylethyl anthranilate.

phenethyl isobutyrate. See 2-phenylethyl isobutyrate.

phenethyl phenylacetate. See 2-phenylethyl phenylacetate.

phenethyl propionate. See 2-phenylethyl propionate.

phenethyl salicylate. See 2-phenylethyl salicylate.

ortho-**phenetidine** (2-aminophenetole) $NH_2C_6H_4OC_2H_5$.
Properties: Oily liquid; rapidly becomes brown on exposure to light or air. Solidifies below −20°C; b.p. 228-230°C. Soluble in alcohol and ether; insoluble in water. Combustible.

fenuron.

aminobenzene)

unstable in air; usually
hydrochloride; sp. gr.
287°C; soluble in alco-

a-dinitrobenzene or ni-
rochloric acid Purified

urity.
n. MCA warning label.
detection of nitrous
; laboratory reagent.
Other restricted arti-

ine; ortho-diaminoben-

ic crystals; darkens in
).p. 252-258°C; soluble
chloroform; somewhat

o-dinitrobenzene or ni-
rochloric acid. Purified

purity.
hotographic developing
rratory reagent.

minobenzene)

le crystals (oxidizes on
id black); m.p. about
alcohol, ether; soluble
d by light. Flash point

-dinitrobenzene or ni-
ochloric acid. Purified

urity.
estion and inhalation;
ince, 0.1 mg per cubic
label.
notographic developing
l measurements; inter-
tioxidants and acceler-
reagent.
Other restricted arti-
White label.

-(meta-hydroxyphenyl-
nloride)
·HCl.
hite crystals; odorless;
acid to litmus paper;
in alcohol; m.p. 140-
on.

alcohol.

$_2CH_2OH$.
.0970 (20/20°C); b.p.,
01 mm (20°C); wt 9.1
viscosity 1.01 poise
.c.). Combustible.

uffs.

le.

2-phenylethyl acetate (phenethyl acetate) $C_6H_5CH_2CH_2OOCCH_3$. (Not the same as sec-phenylethyl acetate).
Properties: Colorless liquid; peach-like odor. Soluble in alcohol, ether, and most fixed oils. Sp. gr. 1.030-1.034; refractive index 1.497-1.501 (20°C); b.p. 226°C; flash point 230°F; combustible. Toxicity unknown.
Derivation: (a) Interaction of ethyl acetate and aluminumphenyl ethylate. (b) Interaction of acetic anhydride and phenylethyl alcohol in the presence of sodium acetate.
Grades: Technical; F.C.C.
Containers: Glass bottles.
Use: Perfumery; laboratory reagent.

sec-**phenylethyl acetate.** See alpha-methylbenzyl acetate.

phenylethylacetic acid (2-phenylbutyric acid) $C_2H_5CHC_6H_5COOH$.
Properties: White crystals with aromatic odor; m.p. 41.0°C (min), insoluble in water; soluble in alcohol, ketones, and esters. Combustible; toxicity unknown.
Use: Organic synthesis; laboratory reagent.

2-phenylethyl alcohol. See phenethyl alcohol.

2-phenylethylamine (phenethylamine; 1-amino-2-phenylethane) $C_6H_5C_2NH_2$.
Properties: Liquid with a fishy odor; absorbs carbon dioxide from the air; strong base; sp. gr. 0.9640; b.p. 194.5°C; soluble in water, alcohol, and ether.
Derivation: From phenylethyl alcohol and ammonia under pressure.
Grades: Technical, scintillation.
Containers: Drums.
Hazard: Skin irritant.
Uses: Organic synthesis; laboratory reagent; scintillation counter CO_2 absorber).

2-phenylethyl anthranilate (phenethyl anthranilate) $H_2NC_6H_4COOC_2H_4C_6H_5$.
Properties: Colorless liquid which yellows with age; odor of grape and orange; sp. gr. 1.14 (25/25°C). Combustible; nontoxic.
Uses: Perfume; flavoring.

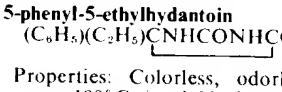
phenylethyl carbinol. See phenylpropyl alcohol.

phenylethylene. See styrene.

N-**phenylethylethanolamine** $C_6H_5N(C_2H_5)C_2H_4OH$.
Properties: Solid; m.p. 37.2°C; b.p. 268°C (740 mm); sp. gr. 1.04 (20/20°C); very slightly soluble in water. Flash point 270°F (COC). Soluble in alcohol, acetone, benzene. Combustible. Low toxicity.
Containers: Drums.
Uses: Solvents; chemical intermediates; preparation of dyes for acetate rayons; laboratory reagent.

pehnyl ethyl ether. See phenetole.

5-phenyl-5-ethylhydantoin



Properties: Colorless, odorless crystalline powder; m.p. 199°C; insoluble in water.
Use: Medicine

2-phenylethyl isobutyrate (phenethyl isobutyrate) $(CH_3)_2CHCOOC_2H_4C_6H_5$.
Properties: Colorless liquid; pleasant odor; sp. gr. 0.988 (25/25°C); refractive index (n 20/D) 1.488; soluble in alcohol and ether. Combustible; nontoxic.
Uses: Perfumes; flavoring.

phenylethylmalonylurea. See phenobarbital.

2-phenylethyl mercaptan $C_6H_5CH_2CH_2SH$.
Properties: Liquid. Boiling range 193-225°C; unpleasant odor; sp. gr. 1.0264 (60/60°F); refractive index 1.5582 (n 20/D); flash point 160°F. Combustible.
Containers: Bottles.
Hazard: Probably toxic.
Uses: Organic synthesis; laboratory reagent.

2-phenylethyl phenylacetate (phenethyl phenylacetate) $C_6H_5(CH_2)_2OOCCH_2C_6H_5$.
Properties: White crystals; hyacinth odor. Sp. gr. 1.080-1.082; congealing point 27°C. Combustible; low toxicity.
Containers: Bottles.
Uses: Perfumery; flavors.

2-phenylethyl propionate (phenethyl propionate) $C_2H_5COOC_2H_4C_6H_5$.
Properties: Synthetic colorless liquid; flower-fruit odor; miscible with alcohols and ether; sp. gr. 1.012 (25/25°C). Combustible; low toxicity.
Uses: Perfumes; flavors.

2-phenylethyl salicylate (phenethyl salicylate) $C_6H_5C_2H_4OOCC_6H_4OH$.
Properties: Snow-white crystals; very faint aromatic odor. Soluble in 14 parts of 95% alcohol. Congealing point 41.5°C. Combustible. Low toxicity.
Uses: Flavors.

phenyl ferrocenyl ketone. See benzoylferrocene.

phenyl fluoride. See fluorobenzene.

phenyl fluoromethyl ketone. See fluoroacetophenone.

phenylformamide. See formanilide.

phenylformic acid. See benzoic acid.

phenyl gamma acid. See phenyl-2-amino-8-naphthol-6-sulfonic acid.

phenyl glycidyl ether (1,2-epoxy-3-phenoxypropane; PGE) $H_2COCHCH_2OC_6H_5$.
Properties: Colorless liquid; sp. gr. 1.11; b.p. 245°C; m.p. 3.5°C.
Hazard: Toxic by skin absorption; moderately irritating to eyes and skin. Tolerance, 10 ppm in air.

D(−)-alpha-**phenylglycine** $C_6H_5CH(NH_2)COOH$.
Properties: Crystals; m.p. 245-248°C; insoluble in water, ether, alcohol; soluble in acid.
Containers: Fiber drums.
Use: Intermediate.

phenylglycolic acid. See mandelic acid.

phenylhydrazine $C_6H_5NHNH_2$.
Properties: Pale yellow crystals or oily liquid; becomes red-brown on exposure to air. Soluble in alcohol, ether, chloroform, benzene, and dilute acids. Soluble in water, alcohol, and benzene. Sp. gr. 1.0978; m.p. 19.35°C; b.p. 243.5°C, with decomposition. Flash point 192°F (c.c.). Combustible. Autoignition temp. 345°F. Also available as the hydrochloride.
Derivation: Reduction of diazotized aniline; followed by reaction with sodium hydroxide.
Grades: Commercial; C.P.; reagent.
Containers: Glass bottles; drums.
Hazard: Highly toxic by inhalation, ingestion, and skin absorption. Tolerance, 5 ppm in air.

WEST

Freeform Search

Database: US Pre-Grant Publication Full-Text Database
IBM Technical Disclosure Bulletins

Term: 113 and (mute or miticide or miticidal)

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Generate: ○ Hit List ◉ Hit Count ○ Image

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Main Menu | Show S Numbers | Edit S Numbers | Preferences

Search History

Today's Date: 8/3/2001

DB Name	Query	Hit Count	Set Name
USPT,JPAB,EPAB,DWPI	l12 and (mite or miticide or miticidal)	8	L13
USPT,JPAB,EPAB,DWPI	l1 and essential oil	519	L12
USPT,JPAB,EPAB,DWPI	l2 and essential oil	8	L11
USPT,JPAB,EPAB,DWPI	l1 same (mite or miticide or miticidal)	9	L10
USPT,JPAB,EPAB,DWPI	l7 and (pest$8)	0	L9
USPT,JPAB,EPAB,DWPI	l7 and (mite or miticide or miticidal)	0	L8
USPT,JPAB,EPAB,DWPI	l1 near9 essential oil	3	L7
USPT,JPAB,EPAB,DWPI	l1 and plant essential oil	2	L6
USPT,JPAB,EPAB,DWPI	l2 and (contact$3 or fumig$5 or spray$3)	30	L5
USPT,JPAB,EPAB,DWPI	l3 and (contact$3 or fumig$5 or spray$3)	0	L4
USPT,JPAB,EPAB,DWPI	l1 near9 (mite or miticide or miticidal)	3	L3
USPT,JPAB,EPAB,DWPI	l1 and (mite or miticide or miticidal)	54	L2
DWPI,USPT,EPAB,JPAB	(phenethyl alcohol or phenylethyl alcohol or 2-phenylethanol or benzyl carbinol or 2-phenylethyl alcohol or 1-phenylethyl alcohol)	4226	L1

(FILE 'HOME' ENTERED AT 16:34:15 ON 03 AUG 2001)

INDEX 'ADISALERTS, ADISINSIGHT, AGRICOLA, ANABSTR, AQUASCI, BIOBUSINESS
BIOCOMMERCE, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO, CABA, CANCERLIT
CAPLUS, CEABA-VTB, CEN, CIN, CONFSCI, CROPB, CROPU, DDFB, DDFU, DGENE,
DRUGB, DRUGLAUNCH, DRUGMONOG2, DRUGNL' ENTERED AT 16:34:37 ON 03 AUG 2001

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L1          SEA (PHENYLETHYL ALCOHOL? OR PHENYLETHYL ALCOHOL? OR 2-PHENYLE
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          1145  FILE AGRICOLA
          1388  FILE ANABSTR
            14  FILE AQUASCI
           120  FILE BIOBUSINESS
             2  FILE BIOCOMMERCE
           734  FILE BIOSIS
           110  FILE BIOTECHABS
           110  FILE BIOTECHDS
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           260  FILE CABA
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            34  FILE CIN
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            17  FILE CROPB
            92  FILE CROPU
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             SEA L1 AND (MITE? OR ANTIMIT? OR MITICID?)
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             1  FILE BIOBUSINESS
             2  FILE BIOSIS
             2  FILE CABA
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L2           QUE L1 AND (MITE? OR ANTIMIT? OR MITICID?)
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             SEA L2 AND (FUMIG? OR CONTACT? OR SPRAY? OR PEST?)
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             1  FILE BIOBUSINESS
             1  FILE BIOSIS
             1  FILE CABA
             3  FILE CAPLUS
            10  FILE CROPU
             1  FILE FROSTI
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             1  FILE IFSTAREPLUS
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            45  FILE USPATFULL
             3  FILE WPIDS
             3  FILE WPINDEX
L3           QUE L2 AND (FUMIG? OR CONTACT? OR SPRAY? OR PEST?)
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FILE 'BIOSIS, CAPLUS, WPIDS, CROPU' ENTERED AT 16:51:20 ON 03 AUG 2001
L4           17 S L3
L5           17 DUP REM L4 (0 DUPLICATES REMOVED)
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